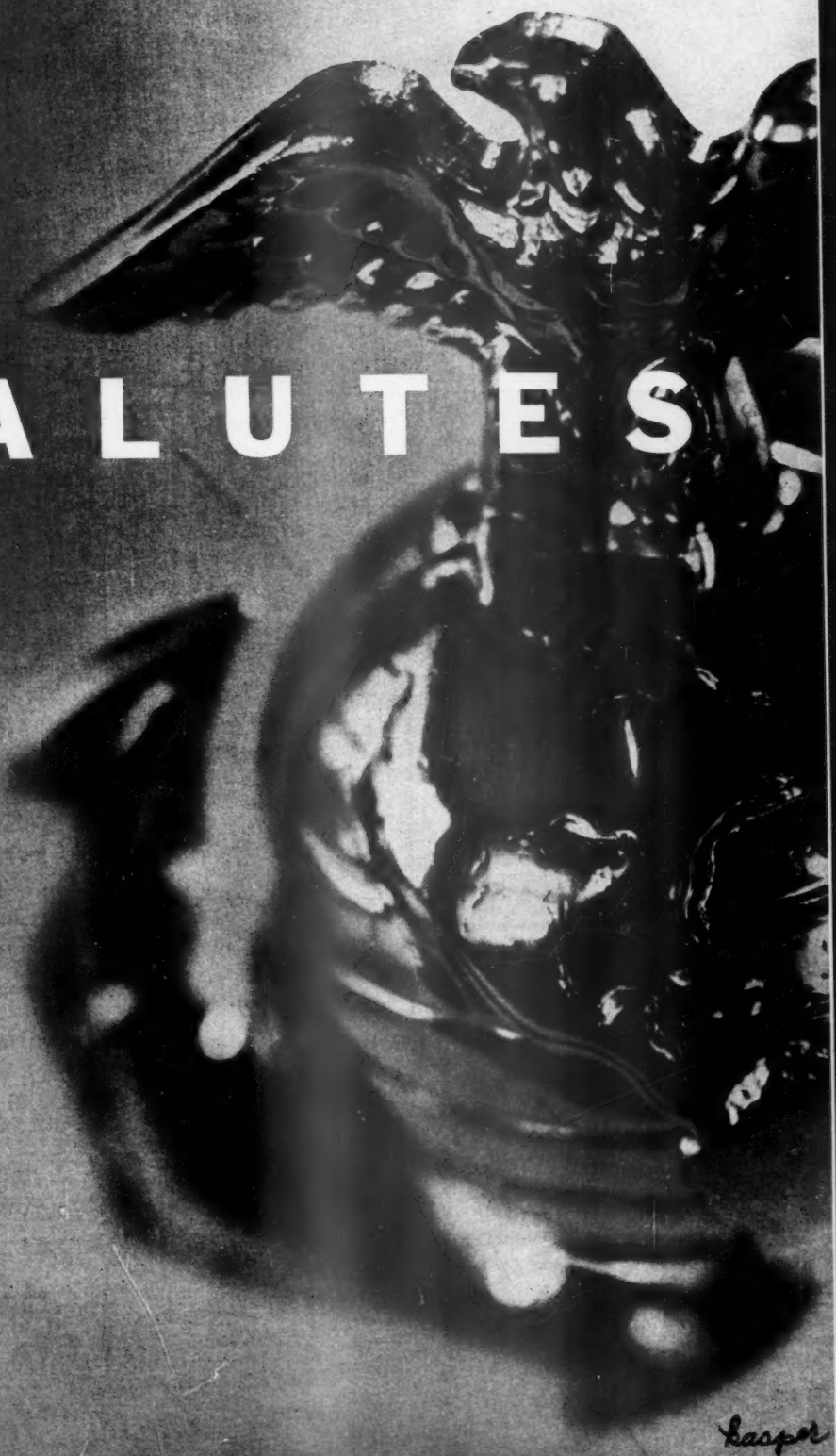
UNIVERSITY OF MICHIGAN
DENTISTRY LIBRARY

Vol. XV *No. 3* *25c*

U.S. MARINES SALUTES

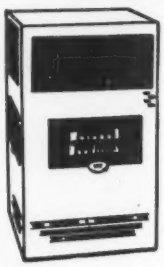


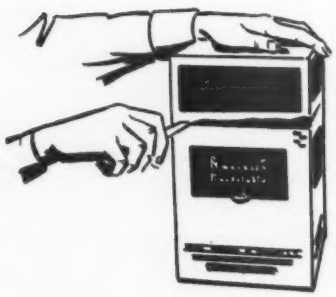
Kasper

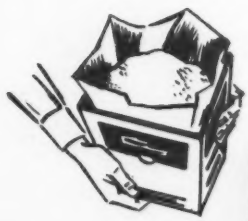
#3 in a series

Ticonium offers you more

PLASTER-BOUND INVESTMENTS







Two scientifically and specially designed investments insure the accuracy of every Ticonium casting.

C-50—a gray plaster-bound investment—produces a dense refractory model.

C-51—a white plaster-bound investment—is used for full-flasking.

These two water-mix investments combine to produce Ticonium cases that FIT.

Another Ticonium exclusive.

YOUR *Ticonium* LABORATORY

tic

Published monthly by TICONIUM
413 N. Pearl St., Albany 1, N. Y.

Copyright, 1956, Ticonium

Annual Subscription, $2.50

EDITOR, Joseph Strack

CONTRIBUTING EDITORS
Arthur H. Levine, D.D.S.
Joseph Murray, D.D.S.

A MAGAZINE FOR DENTISTS, DENTAL ASSISTANTS, AND DENTAL HYGIENISTS

March 1956 Vol XV No. 3

CONTENTS

BEDSIDE DENTISTRY
An exclusive story of how dentistry is being integrated with routine medical treatment in a Chicago hospital 1

TAX DEDUCTIONS FOR HYGIENIST AND ASSISTANT
Written especially for TIC readers by a C. P. A. whose guidance means money saved .. 3

TOOTH CHARACTERIZATION
The second article in one of the most interesting series in dental literature 4

TOGETHER
A moving account of how a dental couple faced and solved the many problems that came with a serious illness 7

U. S. NAVY DENTISTRY ON LAND AND SEA
A photo-story of one of the great dental services of our time 8

INCIDENCE OF ORAL CANCER
Another interesting installment in this authoritative series on carcinoma that was a year in preparation 10

ANGLES AND IMPRESSIONS
Facts and fun from all over the world, dental and otherwise ... 12

PUBLIC HEALTH SERVICE DENTIST
Part 2 of a definitive presentation of the dental activities of the PHS 13

STIMULANT FOR A SLUGGISH PRACTICE
Here is some profitable how-to do-it advice with step-by-step guidance 16

Opinions expressed by contributors to TIC magazine do not necessarily reflect the views of the publishers

Printed in U. S. A. by
Jersey Printing Co., Inc.
Bayonne, New Jersey

Cover artist, Edward Kasper

Bedside Dentistry

by Melvin M. Meilach, D.D.S., and Dona Z. Meilach

How is your bedside manner, doctor? That is the question dentists on the staff at Michael Reese Hospital in Chicago, Illinois, are facing more and more every day. With the use of a mobile dental unit, the dental staff at Michael Reese are actively integrating the role of the dentist with routine medical treatment.

Recently, twelve-year-old Jerry B., flat on his back from crippling polio, complained of a painful throbbing in his cheek. Physicians rushed to his bedside fearing his facial muscles were being attacked by the dread disease. But Jerry was able to open his mouth. Closer examination showed a severe abcess had developed over a back molar. The physicians phoned the dental clinic and in minutes the completely equipped dental unit was wheeled next to Jerry's bed and the attending dentist gave him the necessary treatment.

Doctor Samuel Z. Sostrin, head of the dental department and designer of the unit, says, "Our mobile dental cart is as complete as the modern, efficiently equipped dental office. Whether used in the clinic, next to the patient's bed, or in the operating room, the only change is that a small cup becomes a cuspidor."

The portable cart, believed to be the first of its kind, is a result of studying the needs of non-ambulatory patients for over twenty-five years. When closed it looks like a piece of office equipment, but when opened its many compartments and drawers contain a drill, all dental instruments, linens, a rheostat, and its own electric motor. It is valued between eight and ten thousands dollars. The unit is of considerable weight, but its perfect balance and ball-bearing wheels make it easily maneuverable in and out of elevators and between hospital beds.

Bedside dentistry at Michael Reese is made available automatically to all free ward patients and to private patients at the request of their physician and dentist.

Doctor Morton Kornbloom relates that the other day a gynecologist summoned him to the bedside of a patient who was in her third day of labor and who complained of a violent toothache. When he examined her he found it necessary to extract a tooth. He says, "Women have often come into my office and maintained

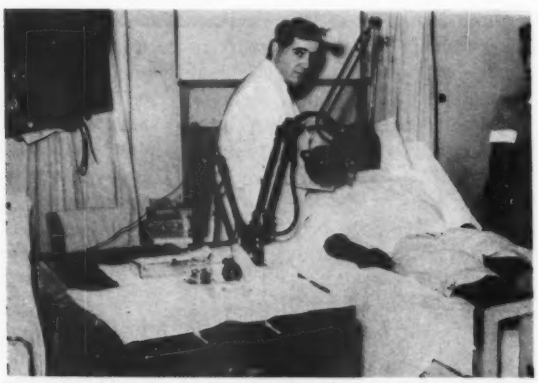
they would rather have a baby than have a tooth pulled. For once I was potentially in the unusual position of finding out which was worse. Unfortunately, I never did learn the answer, for the patient was just as anxious to have both things over with as soon as possible."

Difficulties usually encountered when treating the teeth of spastic, cerebral palsy, hydrocephalic, hemophilia, and extreme apprehensive cases have been greatly reduced at Michael Reese. Such patients are brought into a regular hospital operating room and placed under general anesthesia, which is nitrous oxide and sodium pentathol with curare, a muscle relaxer. Here, the dentist is able to perform his task most efficiently, giving maximum benefit in the minimum amount of time.

Recently, a ten-year-old girl with cerebral palsy and a completely broken down mouth, was wheeled into the operating room. In attendance were an anesthesiologist, who is an M.D., a dentist, a registered nurse, and a dental nurse. With all the equipment familiarly set up on the mobile cart next to the operating table, the dentist was able to work right around the child's mouth.

Says Doctor Henry Horwitz, attending dentist: "The advantages are numerous. A child who is congenitally ill is often impossible to work on in the office. With general anesthesia, I have complete control of the patient, no jaw movement and no saliva. The patient is completely relaxed and may be kept under anesthesia for a few hours if necessary. Therefore, a complete rehabilitation can be accomplished in one sitting without discomfort to the patient."

Doctor Sostrin points out that the bedside service is of tremendous help in caring for patients whose recovery is seriously impaired by neglected teeth, diseased mouths, and infection. When a patient is hospitalized for many months, a routine dental check is an absolute must if he is to be given the advantage of complete medical care.



Doctor Kornbloom practicing "bedside dentistry" with the dental cart. (Photo by Dona Meilach)

The dental staff at Michael Reese unanimously agee that the benefits of their service is threefold: First, it aids in giving patients treatment when they need it most; second, it educates patients in the need of and procedure for proper dental hygiene; third, it gives valuable training to young dentists.

DENTAL DRAMA

The dental staff play important roles in these operating room scenes in Chicago's Michael Reese Hospital. A five-year-old child with a cleft palate, extremely apprehensive, required general anesthesia before Doctor Horwitz could accomplish restoration: eleven cavaties completed in one hour. (Photos by Dona Meilach)

TAX DEDUCTIONS

For the Dental Hygienist

and the DENTAL ASSISTANT

by Joseph Arkin, C.P.A.

A glance at the calendar will tell you the time will soon be at hand when Mr. & Mrs. Federal Taxpayer start their annual struggle with that menace—Form 1040.

Certain deductions, including but not limited to taxes, interest, charity, medical, casualty losses, and so forth, are available to all classes of taxpayers. These are not the items to be discussed here. Instead, this article will set forth those specific items which can be deducted by a *dental hygienist and a dental assistant.*

A salaried person reports wages and other taxable income on page one of the federal return and if the total is under $5,000 can avail herself of two methods of computing her tax: The tax table can be used, or, if specific deductions exceed 10 percent, then it will be to the taxpayer's advantage to itemize deductions at the spaces provided at page two. For earnings over $5,000 the taxpayer can elect to take 10 percent of adjusted gross income (with a limit of $1,000) or list the itemized deductions if they exceed the 10 percent or $1,000 figure.

A list follows of deductions which can be deducted by both the hygienist and the assistant.

Automobile expenses if the auto is used directly in her occupation. Total expenses must be reduced by the personal portion of the car's use. The personal portion of taxes and interest is not lost as a deduction as it can be used on page two. The net automobile expenses can be deducted from gross income on page one to arrive at the adjusted gross income. This is a tax-saving feature as it enables you to take this deduction and use the tax table if you so desire.

Other expenses include the cost of books purchased if used for your job (if of short useful life, otherwise you must take annual depreciation); cost of attending meetings or conventions of your professional group; deductions of unemployment insurance taxes; deductions of sickness insurance taxes (some States only); agency employment fee; membership fee in associations or professional groups; the cost of magazines or periodicals directly connected with your employment; entertainment costs if directly connected with employment; telephone costs directly connected with your job; the cost of uniforms and expenditures for laundering and repair; and other expenses not reimbursed by your employer but required to keep your position.

In addition to these expenses, the hygienist, but not the assistant, can deduct for the rental of instruments and equipment; and for the cost of tools, equipment, and instruments if they are of short useful life. For articles with long life the cost must be recovered through annual depreciation charges.

Expenses that are deducted are always subject to audit and review by the Treasury Department. Therefore, it should be kept in mind that detailed records of expenditures should be maintained. A desk diary is an excellent media for such record-keeping as proper assembling of data will enable you to take advantage of tax savings.

Keep in mind the Revenue Act of 1954 with its complete overhaul and countless changes of existing regulations. When in doubt consult a tax attorney, a certified public accountant, or a representative of the Internal Revenue Service.

"CHEER HIM UP BY PRESCRIBING CHEESECAKE. HE LIKES IT."

Denture Characterization

by Cyril B. Kanterman, D.D.S.

Part II—TOOTH CHARACTERIZATION

Because the teeth are the most prominent feature of the denture from an esthetic standpoint, it is understandable that they are most frequently subject to characterization.

The profession's search for a denture base material that had both satisfactory physical properties and good esthetic qualities was not rewarded until the introduction of the acrylic resins in 1937. Yet, a suitable substance for the manufacture of artificial teeth had long been available.

The invention of mineral teeth is undoubtedly one of the great landmarks in dental history, for it opened new vistas in prosthetic dentistry. In 1789, the Parisian dentist Dubois de Chemant received a patent for a process of preparing fused porcelain for dental use. Porcelain teeth were first imported into America in 1817, although there were allusions to the use of mineral teeth in this country as early as 1794.[1] The early specimens of porcelain teeth were generally crude, but by 1825 they were manufactured and improved in this country.

Since porcelain is a substance that closely approximates the esthetic qualities of tooth enamel, it is not surprising that the practice of tooth characterization developed naturally and to a high degree. Even greater progress was made in this field with the introduction of tooth colored acrylic resins, making possible custom fabrication of denture teeth.

Characterization of denture teeth may be accomplished by alteration of arrangement, shape, or color of the artificial teeth so as to simulate the appearance of the natural dentition. The following classification indicates how denture teeth may be characterized to create a more personalized prosthesis:

Classification of Types of Denture Tooth Characterization

A. ALINEMENT
   1. Spacing
   2. Overlapping
   3. Rotation

B. ALTERATION OF TOOTH SHAPE
   1. Normal incisal wear and abrasion
   2. Abnormal mechanical abrasion
   3. Erosion
   4. Mold duplication of natural teeth

C. COLOR CHARACTERIZATIONS
   1. Stains
   2. Normal changes in coloration on individual teeth
      a. Gingival color
      b. Incisal color
   3. Color variations among different teeth in same arch
   4. Developmental color defects
      a. Opaque enamel spot
      b. Hair-line check

D. PLACEMENT OF RESTORATIONS
   1. Fillings
   2. Crowns

Alinement

The teeth for most full upper and lower denture cases are set up in ideal alinement from the standpoint of esthetics and maximum masticatory efficiency. Yet the dentist is well aware that only a relatively small percentage of individuals approach this ideal with the natural teeth, so that the setting of anterior teeth in perfect alinement frequently results in the well-known "Denture Look." By arranging the anterior teeth with slight overlapping, spacing, or rotation, one may duplicate the arrangement of the patient's teeth without loss of function. Such a technique is especially of value for the immediate denture case, although it may be used to good advantage for all denture cases.

It should be remembered that overlapping of anterior teeth is a condition due to a narrow and constricted arch. If the arch is well-developed so that it can accommodate good-sized teeth without crowding, overlapping of teeth would appear incongruous.[2] Likewise, the spacing of teeth would not be appropriate where the arch is narrow.

---

[1] Weinberger, B. W., *An Introduction to the History of Dentistry*, Vol. I, C. V. Mosby, St. Louis, 1948, pp. 372-378.

[2] Pryor, W. J., "Methods of Producing More Life-like Dentures, including the Preparation and Processing of Acrylic Dentures," *Journal of the American Dental Association*, 28:898 (June) 1941.

The technique of duplicating the natural arrangement of artificial teeth is in line with the thesis of Doctor E. Pound, who contends that denture teeth should be placed in the same position as their natural predecessors, relative to the lips, cheeks, and tongue.[3] He carries this idea even further by maintaining that both anterior *and* posterior teeth should be so positioned. While this technique can be used to good advantage in arranging the anterior teeth so as to exploit all the esthetic possibilities, it is felt that this procedure is less important, or even undesirable, for posterior teeth.[4] Such procedure would frequently involve placing the posterior teeth off the ridge in positions of unfavorable leverage.

Alteration of Tooth Shape

Stock denture teeth should not be regarded as ultimate, finished products to be used as received from the manufacturer. Rather, the shapes of such teeth may be altered to meet the esthetic requirements of the individual case. As it is very difficult, if not impossible, to match exactly the molds of artificial teeth with those of adjacent natural teeth in partial denture cases, it is frequently necessary to change the shapes of the former by judicious grinding. This may include the reduction of incisal edges to simulate normal wear and abrasion, the reshaping of the labial or proximal surfaces, and the development of concavities or facets of varying sizes and shapes on the labial surfaces to duplicate areas of erosion.

This technique is also applicable for full dentures. For example, perfectly shaped teeth are not characteristic of the dentition of elderly individuals. For such patients, the incisal edges of denture teeth are reduced and reshaped to give the appearance of functional wear and abrasion. When the incisal edge of a denture tooth is reduced to simulate normal wear, it should rarely be ground off at a right angle. Rather, it should be ground off at an acute angle to the labial surface of upper incisors and cuspids, and at an obtuse angle to the labial surface of the lower incisors.[5] Not only is this the manner in which the natural teeth usually wear, but also a sharper incising edge is provided.

There is also a color factor to be considered with respect to the incisal wear of teeth. The central and laterial incisor teeth of younger individuals frequently have a grayish cast due to the translucent incisal edges. The incisor teeth of middle-aged or elderly individuals have partially or completely lost the translucency at the incisal edges as a result of normal wear. Thus, to allow the translucent incisal tips to remain on dentures made for these latter patients would result in a tooth coloration that would not appear natural.[6]

In selected cases, even abnormal mechanical abrasion may be duplicated to a moderate degree to give the denture further individuality. Recently, I constructed a partial denture for a woman, a seamstress, whose anterior teeth were notched at the incisal due to the habit of thread biting. Two anterior teeth, a central incisor and a lateral incisor on one side, were replaced, and these were slightly notched to harmonize with similar abrasions on the other anterior teeth.

Custom Fabrication of Teeth

Perhaps the ultimate in cosmetic perfection in denture construction is to reproduce exactly the patient's teeth in acrylic rather than to use stock denture teeth. This procedure is advantageous, not only because it exactly duplicates the shape of the natural teeth, but also because it permits color characterizations not possible with stock teeth.

There are two methods for the custom fabrication of denture teeth, and neither method is involved nor requires special equipment. The technique described by Doctor A. Van Victor is the simplest.[7] Briefly, his procedure consists of taking a pre-extraction impression of the anterior teeth and constructing a model in soluble plaster. Each of the plaster teeth is separated from the model, and the root portions are trimmed so as to create smooth stumps. These teeth are painted with a separating medium, are half-flasked, then full-flasked. After the flask is separated and the plaster teeth are removed, acrylic of the proper shade is packed into the resulting molds and processed.

The method given by Doctor E. B. Kelly[8] differs in that all of the patient's teeth, posterior as well as anterior, are reproduced. These are molded in one continuous block of acrylic which is mixed, packed, and cured along with the denture base.

Generally, only the anterior teeth need be fabricated, and stock posterior teeth are used. Although this technique is a departure from the usual procedure in denture construction, the final result is very pleasing.

---

[3] Pound, E., "Lost—Fine Arts in the Fallacy of the Ridges," *Journal of Prosthetic Dentistry*, 4:9 (Jan.) 1954.

[4] Boucher, C. O., "Through the Eyes of the Editor," *Journal of Prosthetic Dentistry*, 4:1 (Jan.) 1954.

[5] Pryor, W. J., *op. cit.*, p. 899.

[6] Hardy, I. R., "Ways and Means of Avoiding Obvious Artificiality," *Journal of the American Dental Association*, 26:1291 (Aug.) 1939.

[7] Van Victor, A., "Plastic Duplication of Anterior Teeth in the Construction of Immediate Dentures," *Journal of the American Dental Association*, 42:264 (March) 1951.

[8] Kelly, E. B., "All-Plastic Immediate Denture Service," *Journal of the American Dental Association*, 29:380-2 (March) 1942.

Color Characterization

While color selection of denture teeth is now a routine and well-developed procedure, the dentist who wishes to give his patient a more personalized denture must go beyond mere matching of overall tooth shade. He must take into consideration stains, normal changes in coloration in individual teeth and among teeth in the same arch, and developmental color defects frequently found in natural teeth. Tooth colorations may include brown stain due to tobacco or age, opaque white spots in the enamel, yellow areas of erosion, blue or light gray translucent incisal tips, and brown hair-line checks. The last are linear faults in the enamel, extending incisogingivally on the labial surfaces of the teeth.

Some of these color characterizations are available in stock teeth. One may select shades that will simulate the brown hue characteristic of the teeth of elderly individuals. Likewise, it is possible to order stock teeth that have been characterized with opaque white spots and hair-line checks. The truly personalized denture, however, is one in which such colorations are exactly duplicated from the patient's own teeth. This is possible only by custom fabrication of the denture teeth, using appropriate stains.

It is well-known that the shade of tooth color frequently is not the same for the various teeth in the same arch. Doctor V. H. Sears offers the suggestion that the dentist should attempt to duplicate in the denture the color variations as found among the teeth in the same arch, rather than simply to use the same shade for every tooth.

> Using the upper central incisor as a starting place, we should select lateral incisors with more gray and cuspids with more yellow than we see in the sets as carded by the manufacturer. The lower four incisors should carry a high percentage of gray and the lower cuspids a high percentage of yellow. The gray, representing enamel, should be more translucent than the yellower dentine portion. These are characteristics observed in natural teeth.[9]

This is a particularly valuable suggestion for improving the esthetics of a denture. Unfortunately, however, manufacturers of artificial teeth do not package sets containing assorted shades, and dental supply dealers are understandably reluctant to break up standard sets to provide an assortment of colors. Thus, the dentist who desires to use a more natural distribution of tooth color, rather than one shade, must make up the assortment himself.

Placement of Restorations

The final consideration in characterizing denture teeth is the placing of restorations, either fillings or crowns, on such teeth. This is the least esthetic of all characterizations and should be avoided, as such restorations tend to become ornamental rather than cosmetic. The only possible indication for the placing of fillings on artificial teeth is in those cases where the patient desires small interproximal non-metallic restorations which were present in his natural teeth reproduced in his denture.

(Concluding installment next month)

[9] Sears, V. H., "Some Differing Concepts of Denture Service," *Journal of Prosthetic Dentistry*, 4:765 (Nov.) 1954.

THE DENTIST'S MOTHER GOOSE

Jack be nimble, Jack be fleet,
Bring help for the dentist's aching feet!

Mildred Mason

PRESIDENTIAL PUP

One of these busy Weimaraner puppies is now a favorite at President Eisenhower's farm at Gettysburg. The pedigreed pup was given to the President by Doctor Richard T. Street of Long Beach, Calif., an authority on the breed, the author of *Weimaraner Afield* and *Woodcock and Weimaraner*, and the editor of a magazine devoted to the field dog. The boy in the photo is Johnny Street, son of the dentist.

Dental Wives:

There was still one empty chair at the luncheon table when all the guests were seated, and the hostess had given the signal that we were to start eating.

No one mentioned that empty chair, or inquired who was absent. We all knew. A few minutes later, Janet slipped in quietly and sat down beside me, and was immediately a part of the conversation. The luncheon took on new life, for all of us were glad to see her—and we all knew that her reason for being late was a most commendable one.

Two years ago her husband, a fine dentist, had suffered a serious heart attack. For a long while the big question was whether he would ever be able to practice again. Both he and his wife would have been financially ahead if he had claimed total disability, which his heart condition warranted, and had settled down to enjoy the health insurance he had been paying on for years and years.

However, he did not even remotely consider that possibility. He loved dentistry, his patients, and that heartwarming feeling of being of real use to others. From the very first, he was determined to go back to his office as soon as his physician permitted, and practice at least part-time.

This was where Janet stepped into the picture. Of course, she had been in the picture all along, helping him in each progressive stage of his recovery, but now it was decided that she would go to the office with him and remain there, supervising appointments, helping him in other ways and—most important of all—seeing that he went home immediately after the noon whistle blew.

She knew quite well that her husband would never be able to say "No" to the patients who wanted him to stay on and on in the afternoon, doing more and more work, and becoming more and more tired. So Janet became the buffer between her dentist and his patients, seeing that he did not take extra appointments.

Together they have worked out a very satisfactory routine. Each morning she sees that he has a nourishing breakfast in bed, quite early. Then he rests for an hour, while she attends to duties about the house. At nine o'clock they drive to the office.

At noon, or shortly after, Janet drives him home to lunch and a rest. If there is a social occasion on her calendar, she hurries across the city to keep the appointment, just a little late perhaps, but always welcome.

"It took a lot of thought and adjustment for both of us," Janet told me confidentially. "It was terribly hard on my husband to curtail his life so sharply, for he has always been very active and loves to do many things which are out of the question now. However, the situation had to be faced, and this way he is able to take care of his old patients and feel a useful sense of accomplishment. Without it he would be very unhappy."

"But what about you?" I insisted.

She smiled. "Well, I had to make some adjustments also. However, I really like being in the office, and the feeling of being useful. It has meant a very close companionship between us, and I like that too. However, we both think it is a good idea for me to keep up my outside social life as much as I can. It gives me a great lift to meet old friends and have outside contacts."

Janet thought a moment, and then continued: "Probably my biggest adjustment was to refrain from hovering over him each time he attempted to do something which I thought might hurt him. The physician warned me to let him find out for himself just which activities were good for him and which were harmful. I have been astonished at the number of things he can do without feeling any ill effects, but it was very very difficult for me at first to stand by and not be fearful."

I had met this dental couple at social gatherings in the evening, and found them delightful company. The dentist seemed to enjoy himself thoroughly and entered fully into the spirit of the occasion, and his wife was a gay and apparently carefree guest.

However, anyone watching them closely would have been aware that a great and intimate bond of devotion held them together. They had overcome one of life's toughest hurdles—and they had overcome it together.

THREE'S A CROWD

Junior's in the dental chair,
His lips are all a-quiver,
Mother dear is standing near;
She too is all a-shiver.

I wish I could convince the Mom
It's not the drill or me;
My patient simply suffers from
His mother's sympathy.

Nancy Talbert

U. S. NAVY DENTIS ON

(Text and ... News)

Health is assured to every m... Navy comprehensive dental and m... No N... out dental care regardless of ... be st...

A dental patient being lowered from a helicopter to the U.S.S. Manchester.

Operating on a... U.S.S. ... while 8-inch gun...

Commander Burnett, dent... Cassel"

A Case History:

by Dick LaCoste

(Official Photographs, U.S. Navy)

Immediately after World War II, the nation's dentists reaped the rewards of dental care given U.S. servicemen.

Millions who never bothered to visit a dentist regularly became oral-hygiene conscious while working for Uncle Sam.

Millions more took advantage of the dental care available to them under the GI Bill—with and without dentists' encouragement.

Similar was the situation after the Korean action.

Let's see what kind of dental care Navymen receive today.

Specifically, the care received recently by Seaman Seymour J. Cassel, U.S. Navy.

Some time ago, Seaman Cassel had tooth trouble while his ship—the U.S.S. Larson—was in Barcelona, Spain. Because the Larson had no complete modern dental lab, Cassel reported to the U.S.S. Coral Sea for treatment. Dentists diagnosed Seaman Cassel's trouble, and prescribed treatment. Impressions for a denture were taken.

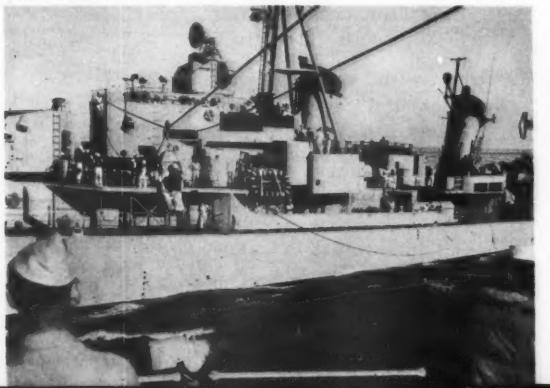
Both ships then left Barcelona, bound for separate destinations. At this time, Cassel was without his denture. A few days later, Cassel developed tooth trouble.

Coincidentally, the two vessels were scheduled to cross one another while at sea.

Arrangements were made for Cassel to get his dentures. At the proper time, he hopped on a hi-line, boarded the Coral Sea, got his partial denture, and was whisked back aboard his ship.

Time elapsed? Fifteen minutes flat.

(Above) Arrow points to Seaman Cassel, dental patient. (Below) Cassel rides hi-line from U.S.S. Larson to U.S.S. Coral Sea on way to dental treatment.



Welcome aboard.

NTIS ON LAND AND SEA

(Text and ... Naval ...)

...every ma... Navy because of the Navy's ...l and me... No Navy man need go with... ...rdless of ... ...e stationed.

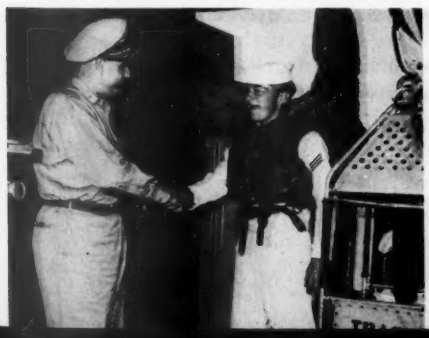
...rating on a... ...e U.S.S. Helena ...e 8-inch gun...

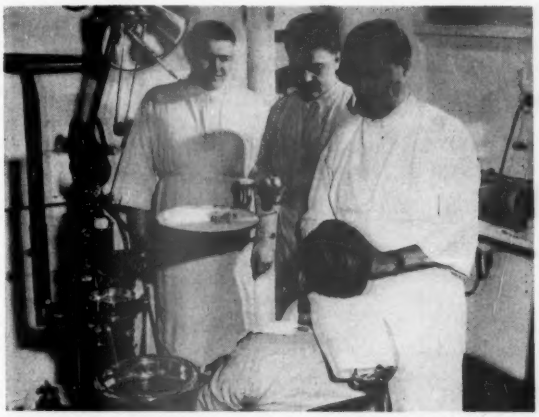
Dentalman Ruth McCall cleaning the teeth of Lt. Emma Litchenwald at the Naval Hospital, Charleston, S. C.

...Burnett, dent... ...Cassel's teeth.

Such is the kind of service that makes men dental-health conscious when they get out of the armed forces.

A grateful patient bids good-by to his dentist.





(Above) Lt. Victor P. Knapp treating a man aboard the U.S.S. Tarawa in the Mediterranean. (Below) Dental office aboard the U.S.S. Essex.

(Above) Dental technicians at the Navy Dental Clinic at Pearl Harbor. (Below) Commander Jack H. Sault lecturing a class at the clinic.

Oral Cancer

by Joseph Murray, D.D.S.

Part III

Incidence of Oral Cancer

The American Cancer Society has a slogan that is well worth remembering: "When the patient is over 40, think of cancer first; when the patient is under 40, think of cancer, too."

According to leading authorities, cancer of the mouth comprises about 5 percent of all human* malignancy, 15 percent of head and neck, and 70 percent of all cancer in the upper respiratory and alimentary tracts. Males seem to be affected about five times as frequently as females. While primarily a disease of middle and old age, it may occur in the young and even in the infant.

Cancer as a killer is second only to heart disease. Doctor Clarence C. Little has pointed out that cancer takes a toll of 200,000 persons annually in the United States (1949), and that for each person dying from cancer, about three are living with it.

With the increase in population and the tendency towards longevity, the morbidity rate is rising, so that by the year 2000, the American Cancer Society predicts, there will be 400,000 deaths per year in the United States.

Doctors Bernard G. Sarnat and Isaac Schour feel, as do other noted clinicians, that the incidence of cancer varies with age, sex, race, occupation, and site.

No age is cancer-free, although the average is probably between sixty and sixty-five years. As a rule, neoplasms grow more rapidly and metastasize earlier in the young. As a matter of fact, more children die of cancer than of infectious diseases. Sarcoma, a malignant tumor of mesodermal origin, like bone, is one of the leading causes of death in childhood.

Although more women than men suffer from cancer because it chiefly attacks the female breast and sex organs, oral malignancy tells a different story.

In cancer of the lip and floor of the mouth, carcinoma strikes 98 percent in the male. Cancer of the tongue, gum, tonsil, palate, and cheek also occurs 80 to 90 percent in the male—about five males to every female. Skin cancer, too, seems to be more common in men.

* Doctor Hayes Martin reports that the occurrence of malignant tumors in the mouth is frequently recorded in domestic animals, such as cows, horses, dogs, cats and monkeys.

An interesting factor regarding the incidence of cancer in different races is that Negroes seem to have less malignant growths of the skin, lip, and mouth than do others. Cancer of the breast is less common in Japanese women. People who practice ritual circumcision, like Mohammedans and Jews, appear to escape carcinoma of the penis.

Occupational Hazards

As for occupational hazards, those who often court malignancy include the X-ray technician exposed to radiation for long periods, the dentist who holds films for patients, and the worker with radioactive material having improper protection, like uranium and cobalt miners, who frequently die of lung cancer due to the inhalation of radioactive particles.

Cancer of the lip is common among fishermen who hold a tarred needle between the lips when repairing their nets.

Sailors, especially, are subject to skin cancer because of prolonged exposure to the sun.

What sites does cancer select? The digestive system, particularly the stomach, is a favorite region. Also occurring with high frequency are skin and breast malignancies. They show less fatality, however, for they can be treated more readily because of greater accessibility.

Cancer involving the skin of the face and neck is the site of about 85 percent of all skin cancer. Its importance to dentists is quite obvious.

Cancer involving the structures of the mouth, the skin of the face and neck, is almost always epidermoid carcinoma, since malignant tumors of the mouth and the skin nearly always arise from the mucous membrane or the epiderm proper.

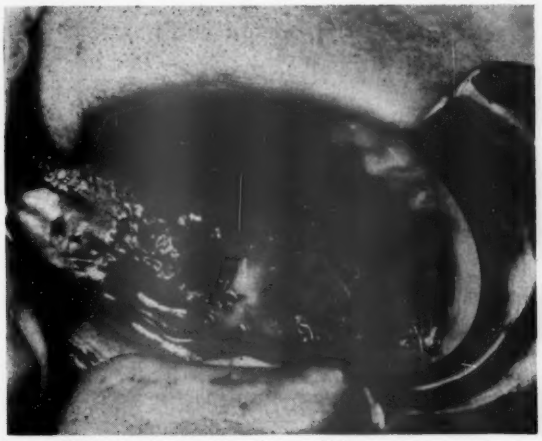
The only exceptions are the fairly rare adenoid tumors of the oral cavity, chiefly of the palate, i.e., mixed tumor or adenocarcinoma of mucous or minor salivary glands, and the rare adenoid tumors of the skin, i.e., cancerous lesions of sweat glands, sebacious glands, and so forth.

Epidermoid carcinoma is of two types: basal-cell, a nonmetastasizing growth; and squamous-cell, a metastasizing tumor.

Basal-Cell Carcinoma

Basal-cell carcinoma is found only on the skin and never as a primary lesion in the mucous membrane of the mouth or the vermilion zone of the mouth. In all probability, an oral growth diagnosed as basal-cell is either ameloblastoma, a form of mixed tumor, or a highly undifferentiated squamous-cell carcinoma.

Oral cancer is a term used to identify those malignant tumors which originate in the mucous membrane lining the oral cavity, mostly epidermoid carci-



(Left.) Squamous-cell carcinoma of the floor of the mouth in a male 36 years of age. Note gingival lacerations from removal of teeth preparatory to precision roentgen therapy. (Right.) Squamous-cell carcinoma, middle third of tongue.

noma of the squamous-cell type. The anterior limit of the oral cavity is represented by the labial mucous membrane with its vermilion zone. The posterior limit of the oral cavity is the free edge of the soft palate, the anterior pillars of the tonsils, the junction of the anterior two-thirds of the tongue with the root of the posterior third. The tonsil, strictly speaking, is a pharyngeal structure.

Squamous-Cell Carcinoma

Of utmost importance to the dental practitioner is the fact that squamous-cell carcinoma is by far the most important and most frequent malignant growth of the oral cavity. It is present in nearly 90 percent of cancerous mouth lesions. Adenocarcinoma, mixed tumors, and so forth make up less than 10 percent of lesions related to mucous membrane. Soft parts sarcoma (fibrosarcoma) and tumors of bone and dental origin, (ameloblastoma) comprise only 2.5 percent of all head and neck malignancy.

Squamous-cell carcinoma is found where there are squamous cells. For example, the skin (primarily the ear), the lip, the oral cavity, the pharynx, the larynx, the esophagus, the cervix uteri, the penis, the vulva, the anus, and so forth, are frequent sites.

Squamous-cell carcinomas of the lip and the tongue are the lesions most frequently encountered, together comprising about 50 percent of all oral malignancy.

The most frequent site on the lip is the junction of the lateral and the middle thirds of the lower lip, although the lesion may appear anywhere on that member.

At the American Oncologic Hospital, cancer of the tongue is encountered more often in the oral portion, as compared to the root or pharyngeal part, the ratio being about eight to one. The most common site is along the lateral edges. The dorsum of the tongue is seldom involved in carcinoma except when leukoplakia undergoes malignant changes.

A malignant lesion of the gums (gingivae) is most often seen in the lower jaws, in the molar region, although sometimes it arises in the canine area and infrequently in the incisor region.

On the soft palate squamous-cell carcinoma occurs about three times as frequently as on the hard palate. However, with the mixed tumor, adenocarcinoma, the distribution is evenly divided.

The most common location for incipient buccal cancer is near the occlusal line in the middle third of the cheek (at the second bicuspid and first and second molar region).

The floor of the mouth, on either side of the midline, near Wharton's papillae, is a frequent site of cancer. Often, the mid-line is crossed as the growth extends. Occasionally, the primary lesion will begin farther back in the mouth.

BIBLIOGRAPHY

1. Castigliano, S. Gordon, "Oral Cancer," reprinted from *Oral Medicine*, by Lester W. Burket, J. B. Lippincott Co., Philadelphia: 1952.

2. Martin, Hayes, *Cancer of the Head and Neck*, American Cancer Society, New York: 1953.

3. Martin, Hayes, *Mouth Cancer and the Dentist*, American Cancer Society, New York: 1949.

4. Sarnat, B. G. and Schour, Isaac, *Oral and Facial Cancer*, Year Book Publishers, Chicago: 1950.

5. Sicher, H., *Oral Anatomy*, C. V. Mosby, St. Louis, 1944.

Illustrations and their legends by S. Gordon Castigliano, B.S., M.D., F.A.C.S., from "Oral Cancer," reprinted from *Oral Medicine*, ed. 5, by Lester W. Burket, A.B., D.D.S., M.D., S.C.D., published by J. B. Lippincott Company, Philadelphia, 1952.

ANGLES AND IMPRESSIONS

Dental Thisa and Data

If you're thinking of packing up your explorers and forceps and looking for newer, brighter horizons, you might heed the advice of Horace Greeley and head west. The U.S. Bureaus of Census predicts that by 1965 California, Oregon, and Washington will increase their population by 27 percent or some 5.5 million. Nevada, Arizona, and Florida will be other areas expected to grow. Lagging behind the national rate of growth during the next decade will be New York, New Jersey, Pennsylvania, and most of the New England states. . . . The most recent report on the medical picture in Russia comes from Major Paul Schafer of the Walter Reed Hospital. Visiting some 375 hospitals, research centers, and clinics in the Soviet Union last year he reports: the quality of Russian medical care is "comparable to ours;" in June the Soviets will graduate 20,000 new physicians in comparison to 7,000 in the U.S., there is one physician for every 666 people in Russia as compared to one for 790 in this country; and 60 percent of the Russian physicians are women. . . . In New Jersey, two new dental schools: Seton Hall University and Farleigh Dickinson. . . . The illegal practice of dentistry seem to be on the rise again and everyone is urged to report any evidences of "bootleg dentistry" to his county society prosecutor. . . . The maxium efficiency of full dentures is 20 percent that of natural dention. . . . While most communicable diseases of childhood are on the downgrade, there is a steady rise of whooping cough. . . . At age 70, 14 percent more American women than men are toothless.

Inci-dentals

We read a report that an Engishman who had applied to the National Health Service in Britain for free dentures after he lost his first set while swimming was refused. The NHS said that the applicant had "exercised lack of good judgment in swimming in a rough sea." A singer who broke her dentures while vocalising had them repaired without question. Using dentures in high C's no doubt shows sound judgment. . . . Tattle Tale Teeth: When police investigated a case of breaking into a school cafeteria in Jacksonville some time ago, they judged the culprit to be about 10 years old. They based their conclusion on the measurements of teeth marks in a slab of cheese. . . . A Columbia University survey showed that one-half of all professional men fail to make out wills. Have you made yours? . . . Having trouble matching teeth? Perhaps you are color-blind —8 percent of all men are.

Tax Talk

Approximately 95 percent of personal and business income tax returns are accepted as filed. About 3 percent are settled within the Internal Revenue Service offices and the remainder usually go to the courts. And, to set everyone at ease, less than 1/500 of 1 percent result in criminal indictments.

Tic Tips

To hasten the setting time of zinc oxide and eugenol paste add some calcium hydroxide powder to the zinc oxide before mixing it with the eugenol. One part of calcium hydroxide to five parts of zinc oxide is the most desirable proportion. . . . Once used, modeling compound should be discarded. It is almost impossible to sterilize it for reapplication without affecting its working properties and the reuse of it might transfer infection from one patient to another.

"IT WAS A CASE OF LOVE AT FIRST SIGHT — THAT'S WHY I DIDN'T INSIST ON A DEPOSIT."

R FOR LIVING

Part 2

Public Health Service Dentist

by Joseph George Strack

Dr. John W. Knutson

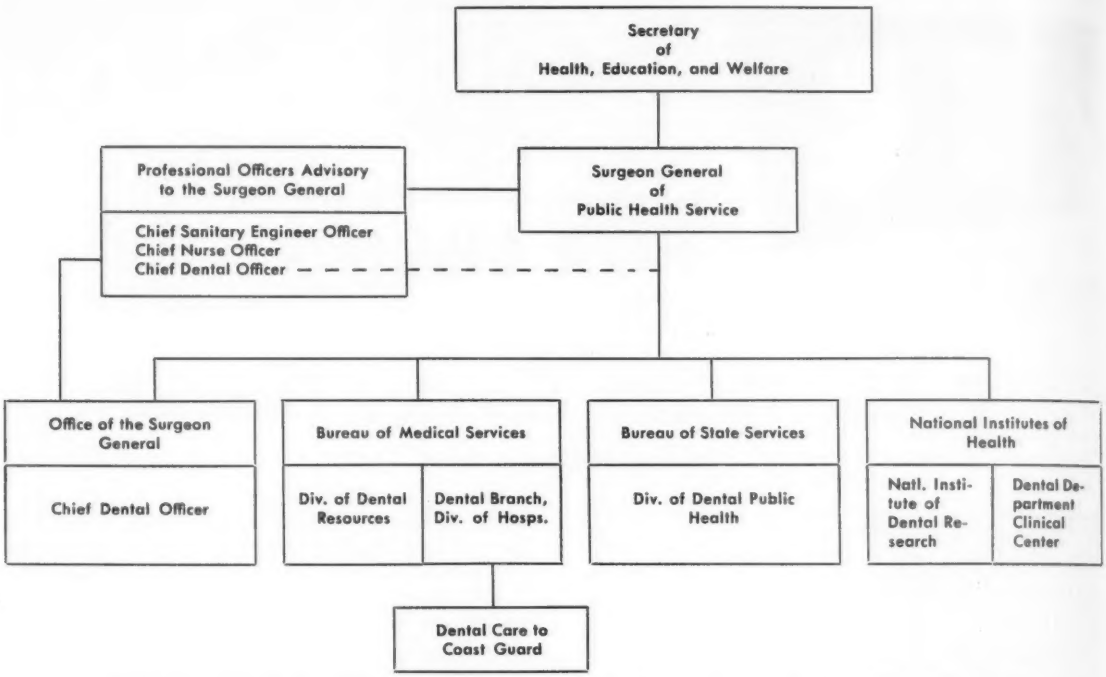
The selection of an American—Doctor John W. Knutson, Chief Dental Officer, U.S. Public Health Service, Department of Health, Education, and Welfare—to head up the international group of dental consultants who convened in Geneva in September 1954 to inaugurate a dental health program for UN's World Health organization, and, in 1955, to devote six months at WHO headquarters in that historic city to implement and expedite the program, was a tribute to American dentistry, the U. S. Public Health Service—the finest health service in the world—and to Doctor Knutson, an international leader in the field of dental health.

Minnesota-born, still in his forties, the father of four children, veteran of a quarter-century of public service, John Knutson has made vital, lasting contributions to the science of dentistry. These contributions include development and refinement of the invaluable DMF index, in collaboration with Doctors Henry Klein and Carroll Palmer; his pioneering research work with Doctors H. Trendley Dean and F. A. Arnold on the fluoridation of water supplies; his tremendous job of "selling" the United States on topical fluoride treatment; and his creation of techniques that make it possible to determine tooth decay rates simply and quickly.

As the *Dental Survey* indicated recently, the people of the United States probably never got a better bargain than they did when young Knutson decided to join the PHS. That was back in 1931—in the pit of the depression. He was twenty-four years old, had just received his D.D.S. degree from the University of Minnesota School of Dentistry, and was interested in research and public health. When he was offered a PHS internship—at less than $25 a week—he accepted it. For the next year he served that internship at the U.S. Marine Hospital in Chicago. He has been in the Service ever since. Today he is its top dental man. As Chief Dental Officer, he is responsible for all PHS dental activities—research, public health, dental resources, and clinical dentistry. These activities are carried out by one of the most skilled staffs in public service—a staff of six hundred men and women that includes 287 dentists, 11 scientists, 1 physician, 5 sanitary engineers, 2 chemists, 53 dental laboratory and research technicians, 24 dental hygienists, 109 dental assistants, 6 statisticians, 14 health-program representatives, 2 information officers, 4 administrative officers, and 93 clerical and stenographic personnel.

All during his steady, busy, productive climb from one important PHS post to another, Doctor Knutson continued with his professional education. In 1939 he obtained from Johns Hopkins School of Hygiene and Public Health his master's degree in public health, and the following year he received his doctorate. Elected to Omicron Kappa in 1931, he was elected to Delta Omega in 1939, a year in which he also taught biostatistics at Johns Hopkins. Since 1948 he has been instructor in dental public health at Georgetown University School of Dentistry. In 1951 he received the University of Minnesota Outstanding Achievement Medal Award.

In his twenty-five years with PHS, Doctor Knutson has not only administered a series of top dental health posts, continued with his professional training, and taught dental public health, but he has also carried forward an impressive career as a researcher.



ORGANIZATION OF PUBLIC HEALTH SERVICE SHOWING STRUCTURAL PATTERN OF DENTAL HEALTH ACTIVITIES

Some of his more important scientific achievements have already been mentioned. The scope, diversity, and quality of his contributions in the field of research are indicated by reports of some of these studies: Characteristics of dental caries in teeth of school children. The objective evaluation of caries-control programs through the use of permanent tooth loss rates. Development of a simple index for determining caries prevalence rates in communities. Determination of the caries prophylactic value of topically applied sodium fluoride solutions. Development of simple and effective uses of topical fluorides in dental caries prevention. Demonstration or pilot programs concerned with the prevention and treatment of dental diseases. Administration of the nation-wide topical fluoride demonstration program. (He is also the editor of *Year Book of Dentistry* and contributing editor of *Dentistry in Public Health.*)

Doctor Knutson's studies typify the broad, all-inclusive, catholic interests of PHS in dentistry and its problems—interests and efforts which seek to "advance national dental health through scientific research, cooperative Federal-State programs, resource studies, and clinical care functions."

Every dentist will be interested in considering the significance of some representative major accomplishments shared by the many dental public health individuals during the last fifteen years, for these achievements, and others, foreshadow the growth—qualitatively and quantitatively—of American dental services, public and private, in the immediate future. Briefly then:

1. Growth of the organization and staffing of dental units in the State health departments. In 1941 there were only 27 such separate dental units; today there are 46, in addition to those in the three territories and the District of Columbia. "Establishment of the American Board of Dental Public Health, fostered by the American Dental Association and the American Public Health Association, also aided in improving the standards and training of public health dentists and marks another milestone in the growth pattern of dental public health."

2. Organization of the Dental Health Section of the American Public Health Association, the American Association of Public Health Dentists, the Dental Health Section of the American Dental Association, annual conference of the Section with the Council on Dental Health of the ADA, and creation of an Association of State and Territorial Dental Directors.

3. Development, refinement, and full application of the criteria for measuring the size and nature of the dental caries problem in quantitative terms (DMF concept). Doctor Knutson says: "Here, then, for the first time was a tool we could use for measuring the size of the dental caries problem in a community, for epidemiological studies, and for clinical tests of preventive and control procedures. With it we could determine the progress or lack of progress made with a specific program. Without it we could not effectively and confidently move toward our objectives."

4. Establishment of the National Institute of Dental Research in 1948. "It is obviously impossible to evalu-

ate the contributions the institute has made to the improvement of the dental health of our people within the short span of its existence," Doctor Knutson says. "The law providing for its establishment marked the formal recognition by the Government of the United States of the seriousness and importance of the nation's dental health problems."

5. Development of topically applied fluorides and water fluoridation as specific methods for the partial prevention of dental caries, and the historic studies on controlled water fluoridation.

6. Initiation in 1947 of a program for the early detection of oral cancer, through the cooperation of the National Cancer Institute and the American Dental Association. This program has trained dentists and dental students and stimulated clinical and other oral cancer studies, offering the "dentists another opportunity for real public service."

7. Inauguration of the orthodontic program for indigent children in New York State. It represents an outstanding example of assistance from orthodontists and their cooperation with the State Department of Health. "This program has gained the attention of all public health workers concerned with the health hazards inherent in untreated malocclusion."

8. Development of the team approach to the treatment and rehabilitation of cleft lip and cleft palate cases. The team, consisting of the dentist, the pediatrician, the oral surgeon, the orthodontist, the prosthodontist, the speech therapist, and the psychologist, combines talents and competencies for the diagnosis, treatment, and design of prosthetic appliances and the rehabilitation of cleft lip and cleft palate cases.

9. Completion of studies which determined the dental care needs of school children on an annual increment basis; which found that a dentist can double his output with the help of one full-time and one half-time assistant; which demonstrated that the dentist who uses assistants effectively can give better service at less cost and with less fatigue; and finally which showed that, once the children are on a maintenance level, one dentist with the help of trained chairside assistants can render service to approximatly 1,300 children annually.

10. Experimentation with simplified methods for classifying malocclusion, and progress in developing more simplified measurements of periodontal conditions.

Space precludes discussion of such other significant accomplishments as formulation of the principles of dental-care prepayment plans by the American Dental Association; surveys that indicated the "distressing financial, physical-facility and teaching-staff shortages of our dental schools;" the Tennessee Dental Seminars which were designed to bring continuing professional education to dentists on a regional basis; the Askov, Minn., project that demonstrated how dental care services can be brought to a town without a dentist, by drawing on nearby dental manpower; the State Dental Health Workshops which demonstrated how to examine the dental problems of a State and the resources, facilities, and methods which might be employed to solve those problems; and a score of other notable achievements.

About all this, Doctor Knutson says simply: "These accomplishments, important as they are, represent only the beginnings of an effective dental public health program in the United States. But they are sound beginnings, and they will provide an adequate foundation upon which to build the framework of public and private dental health activities that all of us—patient, dentist, public health worker—see as a basic need if oral health in our country is ever to be raised nearer to the optimum level."

Next Month—Part 3

BRIEF BIOGRAPHY OF A DENTAL LEADER

Dr. Norman F. Gerrie

Doctor Norman Forbes Gerrie was Acting Chief Dental Officer of the U. S. Public Health Service during Doctor Knutson's service at Geneva for WHO.

Doctor Gerrie's professional career began in 1931, when he received his dental degree from Northwestern University Dental School and entered private practice in Chicago and later in Ogden, Utah. He joined the Utah State Department of Health in 1937 and in 1940 became associated with the Montana State Department of Health, a confirmed public health worker.

It was in 1943 that he became a PHS dental officer. Eleven years later he was chosen Chief of Development Studies Branch, Division of Dental Public Health.

Doctor Gerrie, continuing with his professional education, obtained his M.P.H. degree from the University of Michigan School of Public Health in 1946.

He is a diplomate of the American Board of Dental Public Health and a member of the American Dental Association, the American Public Health Association, and the American Association of Public Health Dentists, of whose Executive Council he is also a member.

Stimulant for a Sluggish Practice

by Maurice J. Teitelbaum, D.D.S.

Some time ago, when business started to slump and the period of "readjustment" set in, a pharmacist hit upon a novel way of stimulating business. He sold silver dollars for ninety cents each! For anyone who could use a dollar it was a real buy. It was just a publicity stunt, of course, and a clever one at that.

To suggest that dentists resort to tactics of this sort would be unthinkable. Yet, within the bounds of ethical conduct, the dentist can inject stimulants into his practice. These stimulants are to be found in each dentist's own armamentarium. They are to be found in his professional work, professional conduct, civic activities, social contacts, and patient-relationship. The quality of dental work, the appearance of the dentist, and his participation in social and civic organizations in his community are self-evident as aids in the building and sustaining of a successful practice.

The "Recall"

The dentist-patient relationship is a complex and involved activity. It is one that includes both the business aspects of a dental practice and the psychological approach to the patient. However, for the purposes of this article, I should like to dwell upon one phase of that relationship, one that may serve as a stimulant to a sluggish practice, namely, the "recall."

The value of the recall or the check-up period is well recognized by most dentists, but its purpose should also be understood by the patient before current work is completed. The dentist should inform the patient of the manner in which she will be contacted, for when the patient expects notification acceptance is more readily forthcoming. The patient is made to realize that the recall for a check-up enables the dentist to keep a check on any work completed and to guard against any further oral destruction or disease.

There are many ways to keep a record of patients to be recalled. One method is to write the names in a notebook under monthly headings and notify them as the month approaches. Another method, which combines both the reminder to the dentist and the actual recall, is to address an envelope (containing a recall slip or letter) or a postal card (with printed recall matter) to the patient who is completed and then file the correspondence in a monthly file. When the month arrives the letters or postal cards of that month are then mailed out. One of the drawbacks of this method is the inability to follow up with another recall note if the patient does not respond, unless a duplicate list is kept.

Personally, I prefer keeping a separate 3 by 5 card file of my patients for purposes of recall. These cards contain the name, address, and telephone number of each patient, and the date that dental work is started and completed. When the patient is under treatment the card is in alphabetical order under an "active" heading. If the patient is completed in January, for example, the card is removed and placed under June in the monthly heading. I find the cards particularly helpful because exact dates of recall can be joted on them and patients' replies may be noted. For example, the patient may be planning a vacation when she is notified and requests she be contacted in two months. This can be noted on the card and the card moved up two months. This card may also contain personal data or information as to any specific treatment planned at the time of recall. Again, as an example, if at the last appointment the replacement of certain teeth was discussed and the patient agreed to have the work done at the next check-up period, this would be noted on the card. Then, when the patient is contacted, she may be reminded of the necessity to begin the bridgework that was previously discussed.

Methods of Recall

The actual method of recalling may be accomplished by sending out form letters, individually typed letters, or cards. In essence, all of these notify the patient of the custom of the office to contact patients of record for periodical cleaning of the teeth and examination of the mouth. This service, they are reminded, is rendered to safeguard previous work, prevent decay, and insure future good health and appearance. The patient may then be told of the last appointment and asked to telephone or write for a convenient, new appointment. This is generally the accepted method of recalling patients, with certain variations of individual taste. However, it has been our experience that the recall by telephone is more effective. This is performed by the dental assistant, who calls the patient and, with friendliness in her voice, notifies her that it is time for her check-up and then asks what time would be most suitable to come to the office. Thus the patient is more or less jogged; six months ago she agreed to return for a check-up and now she is being called upon to make the promised appointment. A letter can easily be discarded and an appointment put off, but a telephone call prompts many patients to accept definite appointments.

A well-managed recall system can prove to be a powerful stimulant for a sluggish practice.

The TICONIUM Casting of the Month

Palatal bar cases cast in Ticonium, and processed with porcelain teeth, are light in weight, durable, and exact. Low-heat, fine-grain Ticonium is cast to perfect accuracy **everytime.**

These beautiful upper castings are easy to keep clean and have a minimum bulk.

Light weight — another Ticonium exclusive.

tic
413 North Pearl Street, Albany 1, N. Y.
Form 3547 Requested

BULK RATE
U. S. Postage
PAID
ALBANY, N. Y.
Permit No. 1648

UNIVERSITY OF MICHIGAN
SCHOOL OF DENTISTRY
ANN ARBOR MICHIGAN